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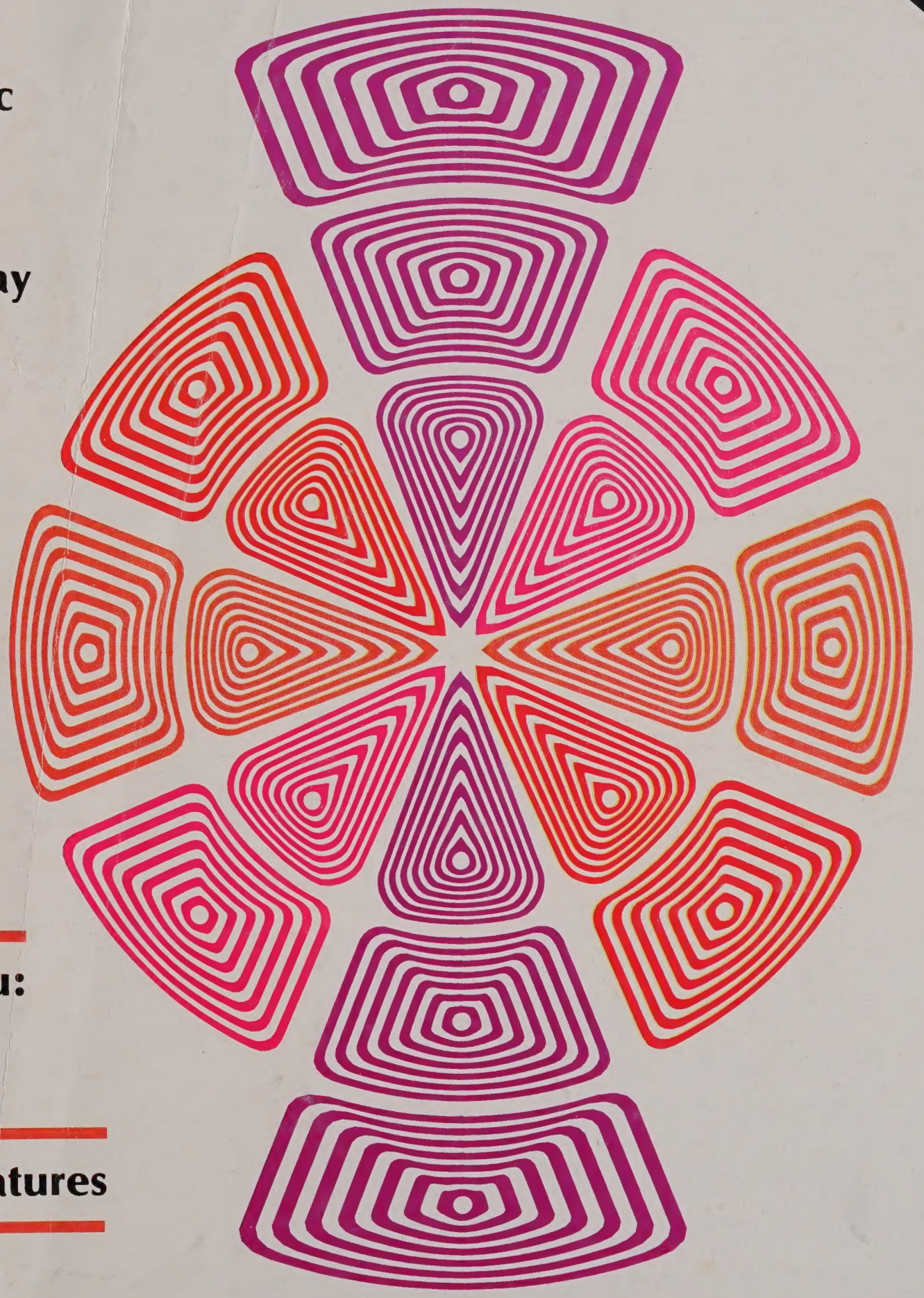
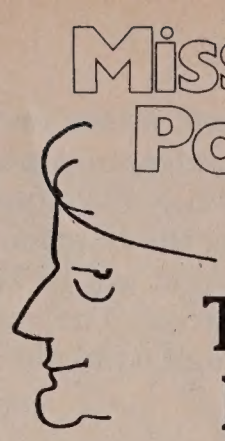


Sneak Preview—Nine New Personal Computers

Each of us has a dream.
What should computer technology
do for mankind?
This is my dream.
You may note that it seems to be
coming closer.
What follows may be thought of
as a first offical
public announcement.



by
Theodor
Nelson

PROSPECTIVE EXTERNALS

The following specifications are presented for general comment prior to being frozen for implementation.

The Xanadu Hypertext Network has been designed as a universal publication system to make written material of all kinds instantly available electronically.

The principal purposes of this enterprise are to provide a universal system for electronic publication and to assure the rapid availability of writings in general and of our literary and historical heritage. We further intend to assure standardization, and most especially to set a level of performance from which no one may accidentally or purposely retreat.

Readers, authors, researchers, browsers, and publishers will all find certain of their needs met. The network is intended as well to be a powerful environment for private and unguided study of any subject. It is also intended as a general archival repository, and can function directly as a teleconferencing and electronic mail system.

CONVENTION 1. TYPES OF DOCUMENTS

A document consists of any text and/or links that someone wishes to store.

Thus the Gettysburg Address is a document, "Jabberwocky" is a document, and a set of links between them is a separate document.

A document may also consist of changes to another document. Thus the modified Gettysburg Address published in *MAD* by Doodles Weaver may be thought of as two documents: the original, and the changes.

The integrity of each document is maintained by these separations; derivative documents are permanently defined in terms of the originals and the changes. Evolutionary continuity is unambiguous and storage space is saved.

CONVENTION 2. OWNERSHIP, CONTROL, ROYALTY

Ancient and public-domain documents have no owner. Otherwise, each document has an owner who controls it and receives royalties for its use.

The owner determines whether a document is to be private or not.

The owner does *not* determine whether a reader may create links to it or modified versions of it.

The owner receives a royalty based upon use: especially, a royalty rate based upon the length of time his document is on a reader's screen. If it is on a screen for one hour, he receives a full hour's royalty. If it is on the screen for half an hour, or on half the screen for one hour, he receives half the hour's royalty. (Note that "on the screen" may for practical purposes be interpreted as *in the final buffer area.*)

If a modified document is read, the original owner and the modifier split the royalty in proportion to the size of the changes, as determined automatically.

A uniform royalty for all authors and documents is desirable, since this means there is no pretext for the system's keeping track of who reads what.

A one-time royalty is to be paid if a paper copy is made.

CONVENTION 3. LEVELS OF PUBLICATION

A document may be *private or published.* A private document may be read and linked-to only by the owner and his associates. A published document is available to anyone, and may be read and linked-to by anyone.

The name and author of a published document are listed in various directories, which are themselves published documents.

A published document may not be withdrawn from publication. Its owner may publish a modified version, with a request not to use the previous version, but the previous version remains published.

A document at an intermediate level, the *open* document, is generally available but not listed in directories.

CONVENTION 4. TYPES OF LINKAGE

Links are made by individuals as pathways for the reader's exploration; thus they are parts or modifications of the actual text. Links may be created within or between documents.

Any type of linkage is possible in principle. We are presently concentrating on three of basically literary origin:

- ¶ *The jump-link.* As symbolized by the asterisk, this generalizes the footnote.
- ¶ *The quote-window.* This allows one document to quote another, with the reader at once free to peruse the document of origin.

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OF THE XANADU HYPERTEXT NETWORK

¶ *Collateration.* This sets parts of two documents in correspondence to one another, permitting recognition and close study of the corresponding parts.

Collateration between successor versions of a document is automatic.

CONVENTION 5. FUNDING AND ACCESS

An hourly base rate is charged to all users.

This includes the cost of fetching all materials, the cost of all editing operations, and the hourly royalty to be divided among authors.

It also includes the placing in archival storage of all that a normal user can type in one hour.

This archival storage is comparatively slow to retrieve, involving minutes rather than seconds.

Storage at a more accessible level, or at more than one main station, involves additional storage charges. Thus a "publisher" is someone who pays for the rapid accessibility of materials and benefits from their use along with the author.

SYSTEM INTERNALS

The external specifications discussed are made possible only by certain technical developments which are for the present proprietary and secret. A number of radical discoveries in the field of computer indexing and retrieval render it possible to offer these services within seconds on configurations of present-day equipment, even as the number of documents and service requests expands to astronomical figures.

OTHER MATTERS

The network will not monitor who reads what or who writes what. Movement of text in the network will be under the dispersed control of user requests, with no central list of what is currently being read.

The network is to be a distributed system of storage and local services, with high-speed lines connecting the storage centers. Each main station is to have a number of functions:

¶ *Local service* to local user terminals, honoring local requests or passing them on to other main stations.

¶ *Local storage* of materials owned by local users and materials having high usage at this locality.

¶ *Pass-through* of requests and materials from other main stations to local users or other main stations.

¶ *Assigned storage:* duties of archival and repository storage as assigned within the system.

The Xanadu Information System consists of the Xanadu Hypertext Network used in conjunction with an official Xanadu Information Terminal. This and other trademarks will be available under nominal license fees to vendors offering compatible equipment, as precisely defined under specifications to be released at a later time and subject to phased change.

Studies are underway as to the best feasible organization for both system security and general economic incentive. Dispersed private-sector financing is foreseen, with probable use of the franchising mechanism. While the profit motive is necessarily involved—the profit motives of many firms and individuals must be enlisted—the ultimate goal is plain, idealistic, and simple.

OTHER ISSUES

A number of thorny issues, and their relation to these designs, remain to be discussed. These include system-level encryptions, libel, copyright infringement, "national security," hardening of the archives against war or disaster, and the general issue-cluster relating to privacy, withdrawability, and the financing of archival keepage.

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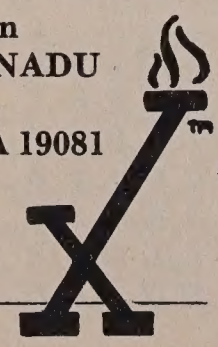
PROJECT XANADU
Box 128,
Swarthmore, PA 19081

Your comments are invited.

We regret that there is little opportunity to answer correspondence. If there is sufficient interest, a convention may be held later this year to discuss these matters. If you would come, please so indicate.



Note: "Xanadu Information System," "Xanadu Hypertext Network," "Xanadu Information Terminal," "Lightning Literature," and the "Eternal-Flaming-X Symbol" are trade and service marks for products and services offered by Theodor H. Nelson.

The C2-4P

The Professional Portable by Ohio Scientific

Ohio Scientific now offers you the world's most powerful portable personal computer in both BASIC-in-ROM and mini-floppy configurations.

C2-4P Mod 2 Standard Features:

- Minimally equipped with 8K BASIC-in-ROM, 4K RAM, machine code monitor, video display interface, cassette interface and keyboard with upper and lower case characters. (Video monitor and cassette recorder optional extras.)
- The fastest full feature BASIC in the microcomputer industry.
- The C2-4P Mod 2 features the most sophisticated video display in personal computing with 32 rows by 64 columns of upper case, lower case, graphics and gaming characters for an effective screen resolution of 256 by 512 elements.
- The CPU's direct screen access, coupled with its ultra-fast BASIC and high resolution, makes the C2-4P capable of spectacular video animation directly in BASIC.
- The C2-4P features computer "BUS" architecture. It internally utilizes a 4 slot backplane. Two slots are used in the base machine leaving 2 slots open for expansion.
- Comes fully assembled and tested. BASIC and machine code are always accessible immediately after powerup.
- A new high density static RAM board and two economical minifloppy options give the C2-4P tremendous expansion capability without sacrificing portability.

The C2-4P offers the user mainframe performance in a portable package. This performance makes the C2-4P suitable for use in home computing, education, scientific and industrial research and small business applications.

Other small personal computers can satisfy the requirements of the computer novice, but no other personal portable can match the C2-4P in professional and computer enthusiast applications.

Yet the C2-4P and its accessories are priced only slightly above the mass marketed "beginner" or "home" computers.

For more information, contact your local Ohio Scientific dealer or the factory at (216) 562-3101.

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